

**CONNECTION MEMBER FOR CONNECTING BICYCLE
RACK AND EXTENSION TUBE CONNECTED TO VEHICLES**

FIELD OF THE INVENTION

The present invention relates to a connection member for
5 being connected with a bicycle rack and the connection member has a
through hole enclosed by a polygonal wall. The extension tube
extends through the through hole and is fixed by the polygonal wall.

BACKGROUND OF THE INVENTION

A conventional bicycle rack 50 is connected to a connection
10 member 43 which is fixed to an extension tube 41 connected with a
connection sphere 421 on a frame 42. The extension tube 41 is fixed
to a rear end of the vehicle and the connection member 43 has two
lugs 431 extending from an underside thereof. The extension tube 41
is located between the two lugs 431 and a bolt 432 extends through
15 the lugs 431 and through the extension tube 41. Nevertheless, the
connection member 43 tends to shake during riding of the vehicle and
the shaking is transferred to the bicycle rack and the bicycles on the
rack. This results a severe shear force on the bolt 432 which could be
broken within a short period of time.

20 The present invention intends to provide a connection
member that can be fixedly connected to the extension tube so as to
prevent the shaking of the bicycle rack.

SUMMARY OF THE INVENTION

In accordance with one aspect of the present invention, there is provided an assembly for connecting a connection member and an extension tube. The connection member is connected to a bicycle rack
5 and the extension tube is connected to a vehicle. The connection member has a through hole which is enclosed by a polygonal wall extending from a side of the connection member. The extension tube is inserted through the through hole. The polygonal wall has at least one hole defined therethrough and the extension tube has at least one
10 threaded hole. A bolt extends through the at least one hole and is engaged with the at least one threaded hole.

The present invention will become more obvious from the following description when taken in connection with the accompanying drawings which show, for purposes of illustration only,
15 a preferred embodiment in accordance with the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is an exploded view to show the connection member and the extension tube of the present invention;

Fig. 2 is a side view to show the connection of the
20 connection member and the extension tube of the present invention;

Fig. 3A shows that the bicycle rack is to be connected on an engaging plate on the connection plate;

Fig. 3B shows that the bicycle rack is connected on an engaging plate on the connection plate;

Fig. 4 is a perspective view to show assembly of the bicycle rack, the connection plate and the extension tube of the present invention;

Fig. 5 is an exploded view to show a conventional
5 connection plate and the an extension tube, and

Fig. 6 is a perspective view to show assembly of the bicycle rack, the conventional connection plate and the extension tube.

DETAILED DESCRIPTION OF THE PREFERRED **EMBODIMENT**

10 Referring to Figs. 1, 2 and 4, the connection plate 20 of the present invention comprises a through hole 22 defined therethrough which is enclosed by a polygonal wall 23 extends from a side of the connection member 20. The polygonal wall 23 has two holes 231 defined in two sides of the polygonal wall 23. An engaging plate 21 is
15 extended from a top of the connection member 20 so that a bicycle rack 50 is connected to the engaging plate 21.

A rectangular extension tube 10 is connected to a frame 30 and a connection sphere 31 is connected to the frame 30. The extension tube 10 is connected to a rear end of a vehicle (not shown)
20 and inserted through the through hole 22. The extension tube 10 has two threaded holes 11 in two sides thereof so that two bolts 24 extend through the holes 231 and are engaged with the threaded holes 11. By this arrangement, the connection plate 20 is firmly connected to the extension tube 10.

The extension tube 10 is enclosed by the polygonal wall 23 and two bolts 24 are used to connect the extension tube 10 and the polygonal wall 23 in two directions so that the connection plate 20 is prevented from shaking during riding of the vehicle.

5 While we have shown and described the embodiment in accordance with the present invention, it should be clear to those skilled in the art that further embodiments may be made without departing from the scope of the present invention.